

From: [POULSEN Mike](#)  
To: [Eric Blischke/R10/USEPA/US@EPA](#)  
Cc: [PETERSON Jenn L](#)  
Subject: RE: Benthic Risk Comments  
Date: 09/27/2010 11:09 AM

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Eric –

Jennifer is out in the field this morning, but we had a chance to talk. I compiled our comments on the latest set of SQG comments. The questions or comments in italics are directed to you, not the LWG. Let me know if you have any questions.

- Mike

*What does the numbering indicate, given that many numbers are skipped?*

*31. Just to let you know, Burt and I perhaps disagree on the importance of the false negative and false positive rates, which I think are still very important, even considering prevalence. However, because this comment says that the new statistics should be used “in addition to and in conjunction with” the prior reliability statistics, I think we are covered.*

*87. What does “OK” in the Category indicate?*

*175. Is the reason for the different counts in bioassay severity because they did not use the EPA 2009 approach?*

*190. Replace with the following:*

We understand that the LWG followed the draft approach used in the past by RSET, but we have recently raised concerns about using the ANOVA test to limit constituents. The ANOVA test assumes that the data sets are normally distributed, which is unlikely the case for most chemicals. A defensible justification must be provided for any method to limit the number of chemicals included in the FPM analysis. Otherwise all chemicals should be included. See also Comment BR9. In addition, the change in control normalization and biomass endpoint could significantly change the conclusions here for some chemicals.

*BR3. Replace with the following:*

To facilitate agency review of the chemical screening step, provide the agencies with the data files and statistical screening results for approval prior to proceeding with the FPM modeling runs. Agreeing on the appropriate set of chemicals will avoid unnecessary development of SQGs using inappropriate datasets. See also Comments BR8 and BR9. *You may want to place this comment after BR9.*

*BR8. Replace with the following:*

The draft BERA should clearly describe how chemicals such as dioxins/furans, DDX, chlordanes, and PAHs were summed for use in the FPM. It is unclear the effect on the model of including individual constituents (such as DDD, DDE and DDT) in addition to sums (total DDX), given the likely correlation between the individuals and the sum. The issue must be explicitly addressed. Also, “total toxic dioxin/furans” are included in the database without explanation. It is unclear if a TEQ approach was used, and if so, which TEFs were applied. For benthic toxicity, the appropriate sum should be total dioxins/furans.

BR9. First sentence: Change "It is unclear whether ..." to "It is unlikely that ...".  
Third sentence: for clarity, add "The ANOVA tests ...".

-----Original Message-----

From: Blischke.Eric@epamail.epa.gov [mailto:Blischke.Eric@epamail.epa.gov]  
Sent: Friday, September 24, 2010 11:23 AM  
To: Shephard.Burt@epamail.epa.gov; PETERSON Jenn L; POULSEN Mike;  
AEbbets@stratusconsulting.com; Bob Dexter; JMalek@parametrix.com;  
jay.field@noaa.gov  
Cc: Humphrey.Chip@epamail.epa.gov  
Subject: Benthic Risk Comments

Attached is the latest version of the benthic risk comments.

I am intending to send these comments out by COB on Monday, September 27th, 2010.

Please provide me with any edits or additional comments by mid-day on Monday. I have summarized some of the key elements of the comments below. Please contact me with any questions.

Thanks, Eric

Foundation of Comments:

Comments are based on a review of Section 6 of the Draft BERA, the Benthic Toxicity Reanalysis Tech Memo, and the Site-Specific SQGs based on Individual Endpoints

Comments are in consideration of agreements between EPA and the LWG over the life of the project (too numerous to list here), the EPA BERA Problem Formulation (February 2008), An Evaluation of the Approach for Assessing Risks to the Benthic Invertebrate Community at the Portland Harbor Superfund Site (MacDonald Landrum, September 2008) and the outcomes of our benthic meeting that took place in January 2010.

Key Elements of Comments:

Sediment Bioassays: Risk assessment must identify all level 1, 2 and 3 (low, moderate and high) hits based on the EPA 2009 reference envelop approach. All four endpoints must be considered. Any concerns that the LWG has regarding the Hyalella biomass endpoint may be presented in the uncertainty analysis. The appropriate reference envelop and hit designation must be incorporated into the predictive models.

FPM: Any fatal flaws associated with the current derivation of the LRM (FPM?) must be identified with specificity in our comments. Examples include the use of individual rather than pooled endpoints, the appropriate statistical

tests and other criteria for identifying chemicals to be included in the model and use of the appropriate hit/no-hit designation in model development. These comments will be incorporated into a revised FPM.

LRM: The updated model will be provided to the LWG along with a description of the model and maps of model output. We will reiterate that the model can not be eliminated as an LOE consistent with the PF.

We will also recommend to the LWG that the LRM be used "as is."

Generic SQGs and PEC Quotient: As with the LRM, these LOEs must not be eliminated from consideration consistent with the PF.

TZW: TZW must be included as an LOE for evaluating risks to the benthic community (note, this comment was provided to the LWG previously as a directed comment and has been resolved).

Reliability Analyses: Additional reliability analyses must be performed. These reliability analyses may be used in the uncertainty analysis to inform risk managers about the relative strength and weaknesses of each LOE but not to eliminate LOE from consideration.

#### Risk Management Considerations:

As stated in our April 21, 2010 PRG letter, benthic toxicity testing is considered the primary LOE for evaluating risks to the benthic community.

The application of predictive models and SQGs is fundamentally a risk management determination that allows managers to develop chemical specific cleanup numbers. However, these models were identified as LOEs in the problem formulation and need to be retained as such.

The reliability evaluation of the predictive models and SQG based LOEs - as well as any other analyses relevant to protection of the benthic community may be used to develop cleanup levels that will allow us to meet the RAO of protecting the benthic community.

We will be meeting with the LWG on September 29th (11:00 am - 2:00 pm; Perkins Coie in Portland) to discuss the development of cleanup levels for protection of the benthic community in the PH FS.

(See attached file: BenthicRiskEvaluationComments092410.doc)